

In the Claims:

For the convenience of the Examiner, all pending claims of the present Application are shown below whether or not an amendment has been made. Please amend the Application as follows:

1. (Currently Amended) A computer-implemented method for detecting and resolving conflicts in association with a data allocation, the method performed using a computer system comprising one or more processing units and one or more memory units, the method comprising:

determining ~~the~~ a relationship between each of a plurality of positions in a hierarchical organization of data;

selecting a position i ;

determining a total weight of position i ;

if a total weight of position i is effectively non-zero, removing ~~the~~ an influence of position i from the other positions in the hierarchical organization of data and adding position i to a set of conflict-free positions;

alternatively, if the total weight of position i is effectively zero:

selecting a position k with which position i has a relationship;

reintroducing ~~the~~ an effect of position k on the other positions if k is already in the conflict-free set;

removing position k from the conflict-free set if k is already in the conflict-free set; and

if i is not the selected position, removing the influence of position i from the other positions and in the hierarchical organization of data adding position i to the conflict-free set; and

successively repeating the method for each position, with each successive position becoming position i , to determine the set of conflict-free positions for use in detecting and resolving conflicts in an allocation of data between a plurality of the positions in the hierarchical organization of data.

2. (Currently Amended) The method of Claim 1, wherein:
the positions comprises parents in the hierarchical organization of data and positions i and j comprise parents i and j ; and
determining the relationship between a plurality of positions comprises determining a parent-parent relationship matrix identifying the relationships between a plurality of parents.
3. (Original) The method of Claim 2, wherein the parent-parent relationship matrix is determined using a parent-child relationship matrix identifying the relationships between each parent and one or more children of each parent.
4. (Currently Amended) The method of Claim 3, wherein the parent-parent relationship matrix comprises ~~the a~~ matrix $R\Sigma R^T$, where Σ comprises a matrix of ~~the~~ variations of the children, R comprises ~~the a~~ parent-child relationship matrix, and R^T is the transpose of R .
5. (Currently Amended) The method of Claim 3, wherein the parent-parent relationship matrix comprises ~~the a~~ matrix RR^T , where R comprises the parent-child relationship matrix and R^T is the transpose of R .
6. (Currently Amended) The method of Claim 2, wherein determining the total weight of position i comprises identifying ~~the a~~ diagonal value in the parent-parent relationship matrix corresponding to parent i .
7. (Original) The method of Claim 6, wherein removing the influence of position i comprises performing a *SWEEP* operation on the diagonal value in the parent-parent matrix corresponding to parent i .
8. (Original) The method of Claim 6, wherein reintroducing the effect of position k on the other positions comprises performing an *INVSWEET* operation on the diagonal value in the parent-parent matrix corresponding to parent k .

9. (Original) The method of Claim 1, wherein selecting position k comprises:
requesting a selection by a user of position k ; and
receiving input from the user identifying the selected position k .
10. (Original) The method of Claim 9, wherein a selection by a user of position k is requested only if position i is included in a pre-defined set of positions for which user input is requested.
11. (Original) The method of Claim 1, wherein selecting position k comprises selecting a position having a shared weight with position i that is effectively non-zero.
12. (Original) The method of Claim 1, wherein:
the hierarchical organization of data comprises one or more dimensions; and
the positions are all members of the same dimension within the hierarchical organization of data.
13. (Original) The method of Claim 1, wherein:
the hierarchical organization of data comprises multiple dimensions; and
the positions are associated with multiple dimensions of the hierarchical organization of data.

14. (Currently Amended) A computer-implemented system for detecting and resolving conflicts in association with a data allocation, the system comprising ~~one or more software components collectively~~ one or more processing units and one or more memory units, the system operable to:

determine ~~the~~ a relationship between each of a plurality of positions in a hierarchical organization of data;

select a position i ;

determine a total weight of position i ;

if the total weight of position i is effectively non-zero, remove ~~the~~ an influence of position i from the other positions in the hierarchical organization of data and add position i to a set of conflict-free positions;

alternatively, if the total weight of position i is effectively zero:

select a position k with which position i has a relationship;

reintroduce ~~the~~ an effect of position k on the other positions if k is already in the conflict-free set;

remove position k from the conflict-free set if k is already in the conflict-free set;

and

if i is not the selected position, remove the influence of position i from the other positions in the hierarchical organization of data and add position i to the conflict-free set; and

successively repeat the above steps for each position, with each successive position becoming position i , to determine the set of conflict-free positions for use in detecting and resolving conflicts in an allocation of data between a plurality of the positions in the hierarchical organization of data.

15. (Currently Amended) The system of Claim 14, wherein:

the positions comprises parents in the hierarchical organization of data and positions i and j comprise parents i and j ; and

determining the relationship between a plurality of positions comprises determining a parent-parent relationship matrix identifying ~~the~~ relationships between a plurality of parents.

16. (Original) The system of Claim 15, wherein the parent-parent relationship matrix is determined using a parent-child relationship matrix identifying the relationships between each parent and one or more children of each parent.

17. (Currently Amended) The system of Claim 16, wherein the parent-parent relationship matrix comprises ~~the a~~ matrix $R\Sigma R^T$, where Σ comprises a matrix of ~~the~~ variations of the children, R comprises ~~the a~~ parent-child relationship matrix, and R^T is the transpose of R .

18. (Currently Amended) The system of Claim 16, wherein the parent-parent relationship matrix comprises ~~the a~~ matrix RR^T , where R comprises the parent-child relationship matrix and R^T is the transpose of R .

19. (Currently Amended) The system of Claim 15, wherein determining the total weight of position i comprises identifying ~~the a~~ diagonal value in the parent-parent relationship matrix corresponding to parent i .

20. (Original) The system of Claim 19, wherein removing the influence of position i comprises performing a *SWEEP* operation on the diagonal value in the parent-parent matrix corresponding to parent i .

21. (Original) The system of Claim 19, wherein reintroducing the effect of position k on the other positions comprises performing an *INVSWEEP* operation on the diagonal value in the parent-parent matrix corresponding to parent k .

22. (Original) The system of Claim 14, wherein selecting position k comprises:
requesting a selection by a user of position k ; and
receiving input from the user identifying the selected position k .

23. (Original) The system of Claim 22, wherein a selection by a user of position k is requested only if position i is included in a pre-defined set of positions for which user input is requested.

24. (Original) The system of Claim 14, wherein selecting position k comprises selecting a position having a shared weight with position i that is effectively non-zero.

25. (Original) The system of Claim 14, wherein:
the hierarchical organization of data comprises one or more dimensions; and
the positions are all members of the same dimension within the hierarchical organization
of data.

26. (Original) The system of Claim 14, wherein:
the hierarchical organization of data comprises multiple dimensions; and
the positions are associated with multiple dimensions of the hierarchical organization of
data.

27. (Currently Amended) A computer-implemented method for detecting and resolving conflicts in association with a data allocation, the method performed using a computer system comprising one or more processing units and one or more memory units, the method comprising:

determining a parent-parent relationship matrix identifying ~~the~~ relationships between a plurality of parents in a hierarchical organization of data, the parent-parent relationship matrix determined using a parent-child relationship matrix identifying ~~the~~ relationships between each parent and one or more children of each parent;

selecting a parent i ;

determining a total weight of parent i by identifying ~~the~~ a diagonal value in the parent-parent relationship matrix corresponding to parent i ;

if the total weight of parent i is effectively non-zero, removing ~~the~~ an influence of parent i from the other parents and adding parent i to a set of conflict-free parents;

alternatively, if the total weight of parent i is effectively zero:

selecting a parent k with which parent i has a relationship;

reintroducing ~~the~~ an effect of parent k on the other parents if k is already in the conflict-free set;

removing parent k from the conflict-free set if k is already in the conflict-free set;

and

if i is not the selected position, removing the influence of parent i from the other parents and adding parent i to the conflict-free set; and

successively repeating the method for each parent, with each successive parent becoming parent i , to determine the set of conflict-free positions for use in detecting and resolving conflicts in an allocation of data between a plurality of the positions in the hierarchical organization of data.

28. (Currently Amended) A computer-implemented system for detecting and resolving conflicts in association with a data allocation, the system comprising ~~one or more software components collectively~~ one or more processing units and one or more memory units, the system operable to:

~~determining-determine~~ a parent-parent relationship matrix identifying ~~the~~ relationships between a plurality of parents in a hierarchical organization of data, the parent-parent relationship matrix determined using a parent-child relationship matrix identifying ~~the~~ relationships between each parent and one or more children of each parent;

~~selecting-select~~ a parent i ;

~~determining-determine~~ a total weight of parent i by identifying ~~the~~ a diagonal value in the parent-parent relationship matrix corresponding to parent i ;

if the total weight of parent i is effectively non-zero, ~~removing-the~~ remove an influence of parent i from the other parents and adding parent i to a set of conflict-free parents;

alternatively, if the total weight of parent i is effectively zero:

~~selecting-select~~ a parent k with which parent i has a relationship;

~~reintroducing-the-reintroduce an~~ effect of parent k on the other parents if k is already in the conflict-free set;

~~removing-remove~~ parent k from the conflict-free set if k is already in the conflict-free set; and

if i is not the selected position, ~~removing-remove~~ the influence of parent i from the other parents and adding parent i to the conflict-free set; and

successively ~~repeating-repeat~~ the method for each parent, with each successive parent becoming parent i , to determine the set of conflict-free positions for use in detecting and resolving conflicts in an allocation of data between a plurality of the positions in the hierarchical organization of data.